

ASSOCIATION OF SELECTED PERSONAL VARIABLES WITH EXTENT OF ADOPTION OF IPM PRACTICES IN CAULIFLOWER CULTIVATION IN UDAIPUR DISTRICT OF RAJASTHAN

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ABSTRACT

IPM is a knowledge-based technology. It involves integration of different methods of disease and pest management to manage an important disease or pest of a crop or to manage all the important diseases and pests of a particular crop. The present study was conducted in Badgaon and Girwa tehsils of Udaipur district of Rajasthan. Four villages from each selected tehsil were taken and 12 respondents were selected randomly from each selected village for the study. Data were collected through prestructured interview schedule. It was found that education level of the respondents was significantly associated with adoption of IPM in cauliflower cultivation. Whereas, age, size of land holding, income level, cosmopolitan outlook, economic motivation & extension contact were not significantly associated with adoption of IPM in cauliflower cultivation.

KEYWORDS: IPM, Extension Contact, Economic Motivation, Cosmopolitan Outlook

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INTRODUCTION

According to National Academy of Sciences, IPM refers to an ecological approach in pest management in which all available necessary techniques are consolidated in a unified programme, so that pest population can be managed in such a manner that economic damage is avoided and adverse side effects are minimized. The goal of IPM is to control population of the pest below level that result in economic damage. Ideally, this is achieved through the integration of all suitable control techniques in a compatible manner.

Integrated Pest Management is one of such systematic approach which emphasizes not only the reduction in use of pesticides and keeping below the level of pest causing economic injury but also it facilitates the use of cultural, mechanical, botanical, biological and chemical methods of control in an integrated manner and restores ecological balance for sustainable agriculture.

MATERIAL AND METHODS

The present study was conducted in the purposively selected Udaipur district of Rajasthan. There are total eleven tehsils in Udaipur district of Rajasthan, out of which, two tehsils namely Badgaon and Girwa were selected on the basis of maximum area under cultivation of cauliflower. Further, a comprehensive list of all the major cauliflower growing villages was prepared in consultation with the personnel of Revenue and Agriculture Department from the identified tehsils. Four villages from each selected tehsil were taken on the basis of maximum

area under cauliflower cultivation. For selection of respondents, comprehensive list of cauliflower growers was prepared with the help of village patwari and Agriculture Supervisor of respective villages. From the list so prepared, 12 respondents were selected randomly from each selected village. Thus, in all 96 farmers were included in the sample of the study. Data were collected through prestructured interview schedule.

RESULTS AND DISCUSSIONS

Association between the adoption level of cauliflower growers about IPM practices and their selected personal variables *viz.* age, education, size of land holding, income level and cosmopolitan outlook, economic motivation, extension contact. To find out the association between these personal characteristics and the level of adoption, chi-square test was applied. The cauliflower growers were categorized into three categories low, medium and high on the basis of mean score and standard deviation of the adoption scores obtained by the respondents. The results have been presented in subsequent Tables.

- Association between Age of the Respondents and Level of Adoption**

Hypotheses

NH₀₁	:	There is no association between age of respondents and adoption of IPM in cauliflower cultivation.
RH₁	:	There is an association between age of respondents and adoption of IPM in cauliflower cultivation.

An observation of data in Table 1 shows that out of total 28 cauliflower growers from young age group, 8 (28.58%) had high level of adoption, while 12 (42.86%) and 8 (28.58%) farmers were found in the medium and low level of adoption group respectively. In the middle age group, 21, 5 and 12 farmers possessed medium, high and low level of adoption respectively. In case of old age group, out of 30 cauliflower growers, 33.33 per cent, 43.33 per cent and 23.33 per cent farmers had low, medium and high adoption level about IPM in cauliflower cultivation.

Table 1: Association between Age of Respondents and Level of Adoption of IPM in Cauliflower Cultivation n=96

Age Category	Level of Adoption			Total	X ² value
	Low	Medium	High		
< 35 years	8(28.58) ¹ (26.67) ²	12(42.86) (26.08)	8(28.58) (40)	28(100) (29.16)	3.12^{NS}
36-44 years	12(31.58) (40)	21(55.27) (45.66)	5(13.16) (25)	38(100) (39.58)	
Above 44 years	10(33.33) (33.33)	13(43.33) (28.26)	7(23.33) (35)	30(100) (31.25)	
Total	30(31.25) (100)	46(47.91) (100)	20(20.83) (100)	96(100)	

NS- Non Significant

Further analysis of Table 1 clearly indicates that the calculated chi-square value (3.12) was less than tabulated value therefore, the null hypothesis (NH₀₁) was accepted. This reveals that there existed no association between age of respondents and adoption of IPM in cauliflower cultivation.

- Association between Education and Level of Adoption of IPM in Cauliflower Cultivation

Table 2: Association between Education of Respondents and Level of Adoption of IPM in Cauliflower Cultivation n=96

Education Level	Level of Adoption			Total	X ² value
	Low	Medium	High		
Upto primary	10(22.22) ¹ (33.33) ²	20(44.44) (43.47)	15(33.33) (75)	45(100) (46.87)	8.762*
Above Primary Level	20(39.21) (66.66)	26(50.98) (56.52)	5(9.80) (25)	51(100) (53.12)	
Total	30(31.25) (100)	46(47.91) (100)	20(20.83) (100)	96(100)	

The results in Table 2 indicates that out of total 45 cauliflower growers in upto primary group, 44.44 per cent, 33.33 per cent and 22.22 per cent had medium, high and low level of adoption. In the group of above primary level, out of 51 cauliflower growers, 50.98 per cent, 9.80 per cent and 39.21 per cent

There is an association between education of respondents and adoption of IPM in cauliflower cultivation. It inferred that education did play a significant role in adoption level of IPM in cauliflower cultivation among the farmers.

- Association between Size of Land Holding of Respondents and Level of Adoption of IPM in Cauliflower Cultivation

The data recorded in Table 3 show that out of 26 cauliflower growers, 38.46 per cent, 46.15 per cent and 15.38 had low, medium and high level of adoption in marginal farmers group. Whereas, out of 39 cauliflower growers 12, 18 and 9 had low, medium and high level of adoption in small famers group. In case of large farmers group out of 31 cauliflower growers, 8, 16 and 7 had low, medium and high level of adoption.

Table 3: Association between Size of Land Holding of Respondents and Level of Adoption of IPM in Cauliflower Cultivation n=96

Size of Land Holding	Level of Adoption			Total	X ² value
	Low	Medium	High		
Marginal farmers	10(38.46) ¹ (33.33) ²	12(46.15) (26.08)	4(15.38) (20)	26(100) (27.08)	1.361 ^{NS}
Small farmers	12(30.76) (40)	18(46.15) (39.13)	9(23.07) (45)	39(100) (40.62)	
Large farmers	8(25.80) (26.66)	16(51.61) (34.78)	7(22.58) (35)	31(100) (32.29)	
Total	30(31.25) (100)	46(47.91) (100)	20(20.83) (100)	96(100)	

This non significant value shows that there is no association between size of land holding and adoption of IPM in cauliflower cultivation technology. Hence, it is concluded that land holding did not play a significant role in adoption of IPM in cauliflower cultivation in the study area.

- **Association between Income Level of Respondents and Level of Adoption of IPM in Cauliflower Cultivation**

Table 4: Association between Income Level of Respondents and Level of Adoption of IPM in Cauliflower Cultivation n=96

Income Level	Level of Adoption			Total	X ² value
	Low	Medium	High		
Low	6(20.68) ¹ (20) ²	16(55.17) (34.78)	7(24.13) (35)	29(100) (30.20)	2.59^{NS}
Medium	14(34.14) (46.66)	18(43.90) (39.13)	9(21.95) (45)	41(100) (42.70)	
High	10(38.46) (33.33)	12(46.15) (26.08)	4(15.38) (20)	26(100) (27.08)	
Total	30(31.25) (100)	46(47.91) (100)	20(20.83) (100)	96(100)	

The data accorded in Table 4 show that out of 29 cauliflower growers, 20.68 per cent, 55.17 per cent and 24.13 had low, medium and high level of adoption in low income group. Whereas, out of 41 cauliflower growers 14, 18 and 9 had low, medium and high level of adoption in medium income group. In case of high income group out of 26 cauliflower growers 10, 12 and 4 had low, medium and high level of adoption.

The data further show that calculated chi-square value (2.59) was less than tabulated value. This non-significant value shows that there was no association between income level and adoption of IPM in cauliflower cultivation. Hence, it is concluded that income level did not play a significant role in adoption of IPM in cauliflower cultivation in the study area.

- **Association between Cosmopolitan Outlook of Respondents and Level of Adoption of IPM in Cauliflower Cultivation**

Table 5: Association between Cosmopolitan Outlook of Respondents and Level of Adoption of IPM in Cauliflower Cultivation n=96

Level of Cosmopolitan Outlook	Level of Adoption			Total	X ² value
	Low	Medium	High		
Low	8(26.66) ¹ (26.66) ²	16(53.33) (34.78)	6(20) (30)	30(100) (31.25)	1.929^{NS}
Medium	12(30.76) (40)	20(51.28) (43.47)	7(17.94) (35)	39(100) (40.62)	
High	10(37.03) (33.33)	10(37.03) (21.73)	7(25.92) (35)	27(100) (28.12)	
Total	30(31.25) (100)	46(47.91) (100)	20(20.83) (100)	96(100)	

The data recorded in Table 5 shows that out of 30 cauliflower growers in low cosmopolitan outlook, 8(26.66%), 16(53.33%) and 6(20%) had low, medium and high level of adoption respectively. In the middle cosmopolitan outlook group, out of 39 respondents, 12, 20 and 7 possessed low, medium and high level of adoption respectively. In case of high cosmopolitan outlook group, out of 27 respondents 37.03 per cent, 37.03 per cent and 25.92 per cent possessed low, medium and high level of adoption.

This non-significant value shows that there is no association between cosmopolitan outlook and adoption of IPM in cauliflower cultivation. Hence, it is concluded that cosmopolitan outlook did not play a significant role in adoption of

IPM in cauliflower cultivation in the study area.

- Association between Economic Motivation of Respondents and Level of Adoption of IPM in Cauliflower Cultivation**

The data incorporated in Table 6 shows that out of 28 cauliflower growers in low economic motivation, 7(25%), 14(50%) and 7(25%) had low, medium and high level of adoption respectively. In the middle economic motivation group, out of 37 cauliflower growers 18, 14 and 5 possessed low, medium and high level of adoption respectively. In case of high economic motivation group, out of 31 cauliflower growers 16.12 per cent, 58.06 per cent and 25.80 per cent possessed low, medium and high level of adoption.

Table 6: Association between Economic Motivation of Respondents and Level of Adoption of IPM in Cauliflower Cultivation n=96

Level of Economic Motivation	Level of Adoption			Total	X ² value
	Low	Medium	High		
Low	7(25) ¹ (23.33) ²	14(50) (30.43)	7(25) (35)	28(100) (29.16)	6.16^{NS}
Medium	18(48.64) (60)	14(37.83) (30.43)	5(13.51) (25)	37(100) (38.54)	
High	5(16.12) (16.66)	18(58.06) (39.13)	8(25.80) (40)	31(100) (32.29)	
Total	30(31.25) (100)	46(47.91) (100)	20(20.83) (100)	96(100)	

The data further show that calculated chi-square value (6.16) was less than tabulated value. This non-significant value shows that there is no association between economic motivation and adoption of IPM in cauliflower cultivation. Hence, it is concluded that economic motivation did not play a significant role in adoption of IPM in cauliflower cultivation in the study area.

- Association between Extension Contact of Respondents and Level of Adoption of IPM in Cauliflower Cultivation**

Table 7: Association between Extension Contact of Respondents and Level of Adoption of IPM in Cauliflower Cultivation n=96

Level of Extension Contact	Level of Adoption			Total	X ² value
	Low	Medium	High		
Low	8(30.76) ¹ (26.66) ²	12(46.15) (26.08)	6(23.07) (30)	26(100) (27.08)	1.0717^{NS}
Medium	10(26.31) (33.33)	20(52.63) (43.47)	8(21.05) (40)	38(100) (39.58)	
High	12(37.50) (40)	14(43.75) (30.43)	6(18.75) (30)	32(100) (33.33)	
Total	30(31.25) (100)	46(47.91) (100)	20(20.83) (100)	96(100)	

The data recorded in Table 7 shows that out of 26 cauliflower growers in low extension contact, 8(30.76%), 12(46.15%) and 6(23.07%) had low, medium and high level of adoption respectively. In the middle extension contact group, out of 38 respondents 10, 20 and 8 possessed low, medium and high level of adoption respectively. In case of high extension contact group, out of 32 respondents 37.50 per cent, 43.75 per cent and 18.75 per cent possessed low, medium

and high level of adoption.

The data further show that calculated chi-square value (1.0717) was less than tabulated value. Thus, the null hypothesis (NH_{07}) was accepted and research hypothesis was rejected. So, there is no association between extension contact and adoption of IPM in cauliflower cultivation. Hence, it is concluded that extension contact did not play a significant role in adoption of IPM in cauliflower cultivation in the study area.

CONCLUSIONS

It was found that education level of the respondents was significantly associated with adoption of IPM in cauliflower cultivation. Whereas, age, size of land holding, income level, cosmopolitan outlook, economic motivation & extension contact were not significantly associated with adoption of IPM in cauliflower cultivation.

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